Co-creation in effectuation processes: A stakeholder perspective on commitment reasoning

Mumford, J. V. and Zettinig, P.

Abstract

In this article, we seek to contribute to theory on market co-creation through effectuation. To achieve this goal, we examine the different kinds of reasoning behind stakeholder commitments in effectuation processes. Although effectual and causal logics sufficiently account for decision-making in instrumental rationality, scholars have paid little attention to value rationality, and how it might influence stakeholder commitments and behavior. Different commitments may follow different rationales, ranging from instrumentally rational commitments based on causal or effectual logics, to value rational commitments based on state-belief or change-belief. The typology of these four commitment reasoning types provides a framework for analyzing stakeholder behavior based on different perceptions of the commitment decision space. Our typology shows that commitments based on value rationality may be qualitatively different from those driven by instrumental rationality and that value rationality may enable commitments under conditions that preclude instrumentally rational actions. Furthermore, different commitments influence market co-creation processes in different ways. In this article, we examine how different commitments affect (1) conflict and effectual churn and (2) the relative path dependence, or shapability, of the market co-creation space. Based on this typology, we propose avenues for future research on co-creation in effectuation processes, with a special focus on stakeholders.

Executive Summary

When attempting to co-create something new—a firm, a product, or a market—entrepreneurs often turn to potential stakeholders, such as friends and family, investors and innovators, or customers and suppliers. Effectuation theory (Sarasvathy 2001) explains how entrepreneurs consider different courses of action in relation to the means at hand and the people they know in their immediate networks. Entrepreneurs secure commitments of new means and potential goals from these and other actors whom they may meet through everyday interactions. However, despite the centrality of stakeholders in the effectuation process, scholars have not systematically examined the reasoning by which stakeholders decide to contribute their time and resources to uncertain and co-creative entrepreneurial processes. Reasons for justifying the commitment of resources to collective pursuits of entrepreneurial success can include profit seeking, adventure, creative passion, or even love. Why these commitments are formed, how they interact, and what this means for the co-creation of markets are the issues we aim to address in this article.

We argue that commitment decisions, as a form of social action, may be either instrumental or based on subjective values. In addition, such decisions may be directed toward preconceived ends or individual means. Using these dimensions, we conceptualize four types of rationale that stakeholders may exercise when committing to an entrepreneurial market co-creation process. An instrumentally rational goal-driven actor follows causal reasoning in the pursuit of calculated ends, whereby risk is weighed against potential profit. An instrumentally rational means-driven actor follows effectual reasoning and avoids the dangers of uncertainty via the logics of control, contingency, and never risking more than they can afford. However, on the value rational end of the spectrum, ends-oriented state-belief reasoning entails risking everything on a hunch or investing in a future that is unpredictable. Finally, means-oriented change-belief reasoning may

entail overconfidence in one's abilities, or other means at one's disposal, and attempts to guide processes in new directions despite potential action being limited.

Our typology of stakeholder commitments suggests that stakeholders will behave differently depending on whether they endorse instrumental or value rationality in their commitments. For an entrepreneurial process directed toward co-creating markets, this means that entrepreneurs participating in these processes should recognize that their stakeholders, current and potential, may have vastly different rationales and expectations. Our typology provides a new perspective on venture creation, in which different combinations of stakeholders may represent different constraints and opportunities. While some stakeholders may constrain co-creation processes toward clear goals, others may enable co-creation processes to remain flexible and shapable. Whereas instrumentally rational stakeholders attempting to shape a market together may get bogged down by calculations of what is possible, value rational stakeholders may provide the impetus required to drive creative action.

Our typology of stakeholder commitments offers a novel way of understanding the potential reasoning and behaviors of actors linked together by a common interest in (though not necessarily a common perception of) entrepreneurial co-creative processes. This opens up a number of avenues for future research that put stakeholders front and center in the exploration of market co-creation through effectuation processes.

1 Introduction

Stakeholders are integral actors in theories and theorizing on entrepreneurial co-creation and effectuation (Dew et al. 2011; Karami and Read 2021). In fact, effectuation processes are said to be "stakeholder dependent" (Dew et al. 2011; Dew and Sarasvathy 2007; Read et al. 2009). However, research into the reasoning behind stakeholders' commitments tying them to effectuation processes is limited. Effectuation processes describe how entrepreneurs explore different courses of action in relation to the means at hand and the people with whom they interact. Entrepreneurs then secure commitments of new means and potential goals from these actors (Sarasvathy 2001). This generates an expanding cycle of resources and a converging cycle of constraints that eventually coalesce into a new firm in a new market by means of an intersubjective reshaping of the world (Sarasvathy and Dew 2005b, 2008). Previous effectuation literature argued that partnerships between effectual entrepreneurs and stakeholders are based on a common means-driven "effectual logic" (Wiltbank et al. 2006). However, recent empirical and conceptual research has shown that stakeholders' goal-oriented or "causal logics" can also influence how effectual processes unfold (Jiang and Rüling 2019; Kerr and Coviello 2019b).

To fill this research gap, we will examine how stakeholders' different rationalities may influence the manner in which their commitments are secured and how these commitments affect the market co-creation process in the future. We contend that extant discourse on effectuation processes adopts an overly instrumentalist perspective on stakeholder interaction. Therefore, broadening the focus to include value-based and affective logics and behaviors may help generate new theoretical insights. Beyond effectuation literature, scholars have found that entrepreneurs are more successful in securing resources from external actors by leaning on relational ties (Newbert and Tornikoski 2013), storytelling (Martens, Jennings, and Jennings

2007), or social contraction (Starr and Macmillan 1990) rather than relying on purely factual information. These findings are consistent with the fact that entrepreneurial decision-making and risk perception are strongly influenced by emotions (Podoynitsyna, Van der Bij, and Song 2012). Decision-making heuristics rooted in subjective values that are neither causal nor effectual—such as intuition and gut feeling (Huang and Pearce 2015), overconfidence (Baron 2000; Griffin and Varey 1996), trust (Karri and Goel 2008; Goel and Karri 2006; Goel, Bell, and Pierce 2005; Adler 2001), and passion (Cardon et al. 2009)—may influence how and why stakeholder commitments are made or secured and how such commitments affect entrepreneurial processes.

If we assume that the reasoning behind the commitments of means and goals that drive effectuation processes can differ from stakeholder to stakeholder and that this reasoning can range from instrumental to value-driven rationality, it follows that considering the consequences of different types of reasoning can enhance effectuation's explanatory power as the latter relates to co-creation. Therefore, in this article, we will conceptualize stakeholder reasoning strategies underlying their commitments by answering the following research question: Why do stakeholders commit to co-creation in effectuation processes? To answer this question, we first review the effectuation literature on stakeholder commitments and identify the limits of existing theories. Then, we examine stakeholders' commitments by exploring how stakeholders subjectively perceive the commitment decision space. Afterwards, we combine the ends- and means-driven orientations in causation and effectuation with Weber's (1978) classical conceptions of instrumental and value rationality in social action and argue that stakeholder reasoning may fall within four conceptually derived ideal types: causal reasoning, effectual reasoning, state-belief reasoning, and change-belief reasoning. While causal and effectual reasoning have been explicated within the extant effectuation literature, state-belief and change-

belief are newly presented in this article. State-belief reasoning refers to decision-making based upon a value rational belief in an imagined present or future state, and change-belief reasoning refers to decision-making based upon a value rational desire to change the status quo for its own sake. Using this parsimonious yet theoretically powerful typology, we consider the effects that different types of commitment reasoning can have on the intersubjective relationships in effectuation processes and how these different commitments may affect market co-creation. Finally, we examine how our typology can form the basis for a research agenda that extends effectuation theory by placing stakeholders at the center.

2 The Multidimensional Concept of Effectuation

In our review of the extant literature, we found that "effectuation" is used to describe three distinct but interconnected research directions that traverse different levels and units of analysis: effectuation as a form of behavior, as a form of reasoning, and as a process. First, studies that primarily treat effectuation as a form of behavior use the individual decision-maker as the main unit of analysis. Such studies make up the majority of effectuation literature to date. Research in this vein approaches effectuation from a lower level of abstraction, describing it as a set of five behavioral subconstructs variously referred to as "principles" (Sarasvathy 2001), "behavioral principles" (Perry, Chandler, and Markova 2012), "logical frames" (Dew et al. 2009), and decision-making "heuristics" (Werhahn et al. 2015) that guide effectual behavior. This research direction includes efforts to further elaborate and develop (Perry, Chandler, and Markova 2012; Grégoire and Cherchem 2019), validate (Chandler et al. 2011), measure via empirical variance research (McKelvie et al. 2019; Brettel et al. 2012), criticize (Arend, Sarooghi, and Burkemper 2015; Baron 2009), and compare effectuation to other behavioral theories (Fisher 2012) as individual-level behavior or a collection of behaviors and heuristics.

The five effectual behavioral constructs, contrasted with their opposites from the predictive strategies used by persons following causal reasoning, represent (1) a focus on means rather than goals, (2) a focus on affordable loss rather than expected returns, (3) reliance on partnership rather than competitive analyses, (4) exploitation of contingencies rather than pre-existing knowledge, and (5) an emphasis on co-creating an unpredictable future rather than predicting an uncertain one (Sarasvathy and Dew 2005b; Dew et al. 2009; Perry, Chandler, and Markova 2012). Effectual behaviors and heuristics account for the means-oriented, non-predictive logic and associated actions, which have been empirically observed as being employed by "expert entrepreneurs" who enact effectual reasoning (Dew et al. 2009). However, subsequent research has shown that expertise is not a necessary prerequisite to the use of effectual behavior and that, depending on circumstances, entrepreneurs can switch between causal and effectual logics (Reymen et al. 2015, 2017).

Second, the literature that focuses on effectuation as a form of reasoning approaches the concept from a higher level of abstraction. Effectuation, in this case, describes a type of means-oriented rationality (effectual reasoning) that is positioned as the opposite of the reasoning described by the predictive rational choice theory of neo-classical economics or causal rationality (Read and Sarasvathy 2005). In fact, effectuation's ability to account for non-predictive or "non-teleological" entrepreneurial action is presented as its most important aspect (Steyaert 2007, 466). Despite effectuation being described as the opposite of causal rationality, it is seldom referred to as "effectual rationality" (Sharma and Salvato 2011; cf. Sarasvathy and Berglund 2010) and is generally labeled "effectual reasoning," as was first done by Sarasvathy (2001), or "effectual logic" (Sarasvathy and Dew 2005b; Sarasvathy 2004).

Third, research that focuses on effectuation as a process encompasses both effectual reasoning and behavior but shifts focus away from the individual as the unit of analysis to the intersubjective relationships between individuals within networks. Effectuation, in this case, describes how new markets are co-created through a process guided by the effectual reasoning and behavior of the persons involved in the co-creation process, which requires the participation of a diversity of actors loosely referred to as stakeholders in an "effectual network" (Sarasvathy and Dew 2005b).

Our interpretation synthesizes the three research directions on effectuation discussed above and argues that "effectual logic" is a midrange concept that occurs at the interface between effectual reasoning and effectual behavior—that is, effectual reasoning refers to the more abstract, cognitive, and internal individual manifestation of a means-oriented rationality, while effectual logic refers to the more concrete decision-making rules and choices effectual reasoning denotes. Therefore, an individual who is predisposed to means-oriented effectual reasoning will employ effectual logic in decision-making, resulting in observable effectual behavior. An outcome of effectual behavior is that an actor using effectuation's principle of relying on partnerships rather than competitive analysis initiates an effectuation process to secure from stakeholders "credible commitments to a joint course of action" (Sarasvathy and Dew 2008, 728).

Expanding on the main question of this study, when we ask why stakeholders make these credible commitments to joint courses of action—for example, do they make the decision to commit using a common form of logic? If not, what does this mean for the process as it progresses? Before answering these questions, we will first review how the process of

effectuation unfolds and how the extant literature describes the role of stakeholders as co-creators.

2.1 Effectuation as a Process Contingent on Co-creation

Typical causation processes involve picking a particular goal, chosen based on maximized potential returns (adjusted for risk). Then, the causator(s) chooses between means to achieve that goal (Sarasvathy and Dew 2005a; Sarasvathy 2001). Conversely, effectuation processes begin with a set of means and generalized aspirations, and goals emerge as the effectuator interacts with others and forms partnerships along the way (Sarasvathy 2001). These partnerships allow the effectuator(s) to avoid predictive errors under uncertainty because, rather than needing to be predicted, the future is co-created (Read et al. 2016; Sarasvathy 2001; Dew and Sarasvathy 2016). This process is often illustrated by the model shown in Figure 1.

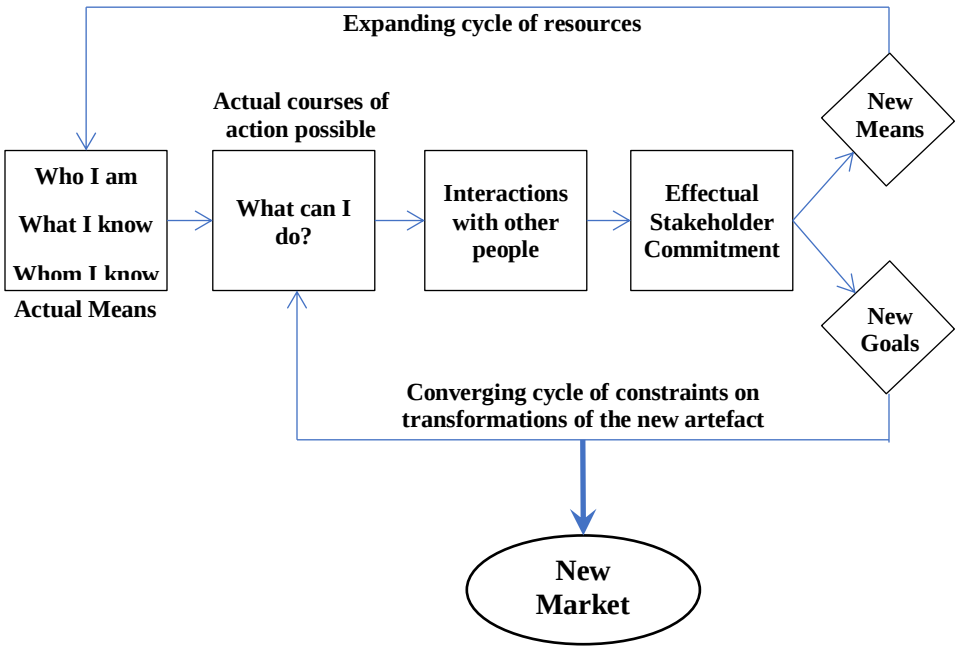

Figure 1. A dynamic model of the effectual network and the new market as an effectual artifact (Sarasvathy and Dew, 2005b)

Sarasvathy and Dew's (2005b) model suggests that new markets can emerge endogenously as an outcome rather than a goal of a process based on effectual heuristics, as a growing effectual network of stakeholder commitments generates an expanding cycle of resources and a converging cycle of constraints. Of particular note, stakeholders' centrality in this process (Sarasvathy et al. 2008) establishes effectuation as an important part of conceptual development in the emerging topic of co-creative entrepreneurship (Karami and Read 2021; Alsos et al. 2020).

Stakeholders are brought into the effectual network through self-selection by means of their initial commitments or pre-commitments—that is, stakeholders actively choose to become part of the process by contributing some initial means in return for some voice in how the process should proceed (Sarasvathy and Dew, 2005b). With each new commitment, the network grows, and the pool of means expands. Each new voice can also constrain the direction of the network through the introduction of clear goals, and those who join later are, therefore, less able to negotiate how the final market that the network produces will look (Wiltbank et al. 2006). Essentially, an effectuation process involves a loosely connected network of actors who, regardless of their subjective reasoning, are all contributing in some way to the transformation and co-creation of a market as an artifact under conditions of uncertainty.

Recent empirical research has suggested that over time, ventures can alternate between periods of effectual and causal logics (Reymen et al. 2015, 2017) or between episodes of causation and effectuation (Jiang and Rüling 2019). Effectuation processes themselves are "conditioned by sequences, combinations, and iterations of effectuation and causation activities" (Jiang and Rüling 2019, 196). Common to all of these findings is the fact that interactions with stakeholders play an important role in influencing the decision-making logics of network actors. Moreover, the development of effectual networks has been shown to occur over several phases,

with stakeholder interactions in earlier phases shaping new interactions in subsequent phases (Galkina and Atkova 2020). Taken together, the existing research suggests that effectuation processes can iteratively change between periods of causation and effectuation activities or involve a combination of both. These activities, and the logics that drive them, are influenced by interactions with stakeholders, both on an individual basis and cumulatively. It follows that research focused on stakeholders provides a strong foundation for theory development on co-creation through effectuation processes, as we will elaborate on in the following section.

2.2 Grounds for Theoretical Development—A Stakeholder Perspective

In line with previous research, we consider the stakeholders in effectuation processes to be persons who share the risks of creating a new market and the benefits thereof (Read, Song, and Smit 2009). Although stakeholders can include founding partners, as founding partners initiate a new effectuation process from nothing, their decision space is qualitatively different from that of the stakeholders who join through commitments at a later time. In this article, we focus on potential stakeholders who are considering committing to a process already underway. The only criterion for an individual or organization to become a stakeholder in an effectuation process is that they "buy into" the network by means of an actual commitment (Sarasvathy 2001; Sarasvathy and Dew 2005b). There are no other restrictions to who can become a committed stakeholder (Wiltbank et al. 2009). Pre-firm, potential stakeholders include "friends and family or random people they [entrepreneurs] meet in the routines of their lives" (Wiltbank et al. 2006, 991–992). As the process proceeds, the pool of potential stakeholders expands to include customers, suppliers, and competitors (Read and Sarasvathy 2005) as well as internal stakeholders, such as employees (Read, Song, and Smit 2009). Due to the diversity of who may become a stakeholder in an effectuation process, we can hypothesize that the reasoning modes

behind commitment decisions may be equally diverse. The challenge is to find a way to identify and categorize reasoning strategies in a way that is both parsimonious and theoretically powerful.

Earlier effectuation literature assumed that stakeholders would share a similar effectual logic with entrepreneurs (Wiltbank et al. 2006). However, we agree with Karri and Goel (2008, 742), who argued that "a more defensible position is that effectuation allows entrepreneurs to bring several parties into their fold regardless of the motives or reasoning process of other parties as long as they can potentially contribute to the evolving vision of the entrepreneur." Indeed, empirical research has discovered evidence of the interplay between and combination of causal and effectual logics in practice (Yu et al. 2018; Smolka et al. 2018; Jiang and Rüling 2019). Furthermore, recent studies have shown that whether actors adopt elements of causal or effectual logic is influenced by those with whom they interact, the nature of pre-existing networks, and the nature of their relationships and resource commitments (Kerr and Coviello 2019b). These findings form a starting point for an inquiry into how stakeholders following different reasoning strategies might influence effectuation processes over time and how different reasoning strategies may synergistically interact within these processes. Although Kerr and Coviello (2019b) have updated the entrepreneur-centric model of effectuation (illustrated in Figure 1) to better account for network dynamics, a stakeholder-focused perspective can move us beyond dyadic relationships and better account for the co-creation process based on effectuation.

Consequently, we believe that an investigation of the reasoning behind stakeholders' decisions to commit to joint courses of action with others in effectuation processes offers a fertile ground for theoretical development. As noted earlier, despite being ostensibly stakeholder driven, theories on effectuation processes have been predominantly entrepreneur-centric. In the extant literature, stakeholder commitments are invariably conceptualized from the perspective of

the effectual entrepreneur or that of an actor already operating in an effectual process rather than from the perspective of an actor outside the process looking in. Given that the reasons behind stakeholders' commitments have been underexplored, we arrive at our central research question. If we assume that stakeholders make commitments using a variety of logics, this raises the question of how stakeholders using different logics can interact when co-creating together. What happens to established commitments when new commitments are made based on the same or a different reasoning? Furthermore, how do commitments based on different reasoning affect co-creation in effectuation processes? In the following sections, we address these questions by first conceptualizing the reasoning behind stakeholders' commitments and then discussing how commitments made under different types of reasoning may affect stakeholder interactions in effectual networks and influence co-creation.

3 Conceptualizing the Reasoning behind Stakeholders' Commitments

A myriad of potential stakeholders may commit to effectuation processes for a multitude of reasons. Sarasvathy et al. (2008) explored how the logic that an entrepreneur uses in decision-making is related to different types of uncertainty that characterize their problem space. Similarly, we will now take up the question of why stakeholders make commitments in terms of (1) their perceptions of decision spaces related to potential commitments and (2) the reasoning that they employ when justifying the commitment.

3.1 Unpredictability versus Path Dependence in the Commitment Decision Space

Although potential stakeholders may not necessarily be entrepreneurs themselves, a commitment to an effectuation process can still be conceptualized as a form of "entrepreneurial action"—that is, "behavior in response to a judgmental decision under uncertainty about a possible opportunity for profit" (McMullen and Shepherd 2006, 134). The reason is that after an

effectual commitment, the stakeholder shares a part of the partnership's future risks (or uncertainties) and rewards or profits (Read, Song, and Smit 2009). Sarasvathy et al. (2008) described the problem space faced by entrepreneurs as comprising three elements: Knightian uncertainty, goal ambiguity, and environmental isotropy. The use of effectuation in response to these problem spaces allows entrepreneurs to overcome, mitigate, avoid, or even exploit the uncertainties they face to their advantage (Sarasvathy et al. 2008; Sarasvathy and Dew 2005b). However, a potential stakeholder's problem space when deciding whether to make a commitment of means to an entrepreneur and/or another individual or organization—their "commitment decision space"—is subjective, contextual, and value-laden; in other words, it is unique to the potential stakeholder.

Figure 2 illustrates our view of a potential stakeholder's commitment decision space. An opportunity to commit arises from interactions with an entrepreneur (or another actor in an unfolding effectuation process). Consequently, the prospective stakeholder forms an understanding of the means and goals of the extant network (to the extent that these are presented by the actor with whom the stakeholder is negotiating a commitment), which the stakeholder compares to their own means and goals to decide if a commitment is desirable.

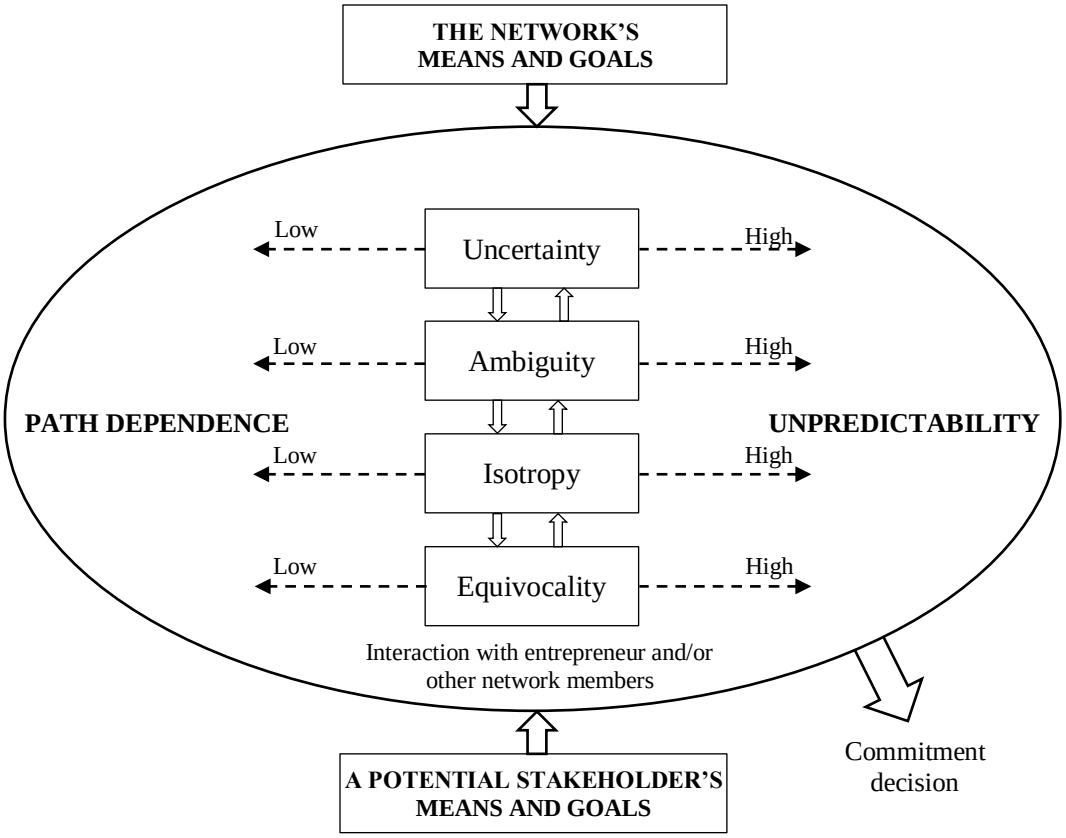

Figure 2. Perceived unpredictability versus path dependence in a stakeholder's commitment decision space

As stakeholders co-determine courses of action through their commitments, it follows that a potential stakeholder's commitment decision space will be similar to the entrepreneurial design space described by Sarasvathy et al. (2008). As such, the commitment decision space will be composed of elements of uncertainty, ambiguity, isotropy, and equivocality in relation to how the potential stakeholder's means and goals might combine with the network's means and goals. These elements tend to be interconnected, so an increase or decrease in one can affect the others. Depending on the level and intensity of the elements, a potential stakeholder may perceive the commitment decision space as being unpredictable, at one extreme end, or as path dependent, at the other.

Although the delineation of uncertainty from ambiguity is often conflated across the literature (Townsend et al. 2018), for this discussion, we define uncertainty as *what is not known* and ambiguity as *what cannot be decided* (i.e., given two or more competing courses of action, no one course is clearly preferable). Uncertainty can be divided as follows: state uncertainty, the recognition that the environment is unpredictable; effect uncertainty, the recognition that there is an inability to predict what kinds of impact the future environment or environmental change will have; and response uncertainty, a lack of knowledge of what to do or what the consequences of action will be (Milliken 1987, 137). On the right-hand side of Figure 2, uncertainty is at its highest when it is *Knightian,* or "true," uncertainty, whereby both state and effect are essentially *unknowable*. Uncertainty is more moderate when state and effect are unknown but discoverable (i.e., "normal uncertainty"); it is low when a state is known but its effects are not (i.e., "risk"; Knight 1921; Milliken 1987).

Ambiguity is based on decision makers' preferences: either they do not know how they want to respond to a situation (i.e., Milliken's [1987] response uncertainty), or they cannot decide what outcome they would prefer (Marchian goal ambiguity [Sarasvathy and Dew, 2005b]). Isotropy reflects "the fact that in decisions and actions involving uncertain future consequences, it is not always clear ex ante which pieces of information are worth paying attention to and which not" (Sarasvathy and Dew 2005b, 539). Isotropy interacts with both uncertainty and ambiguity because deciding whether a piece of information is worth paying attention to is determined both by what one does not know and what one cannot decide. Finally, equivocality is the raw information that is perceived by an actor but to which meaning has not yet been assigned (Weick 1979). Equivocality can be reduced through interactions with others as meaning is assigned to information through collective sensemaking.

The greater a potential stakeholder perceives the elements of uncertainty, ambiguity, isotropy, and equivocality in the commitment decision space to be, the more unpredictable will the target of their commitment appear: *To what will I be committing? What will my commitment achieve?* For some, this unpredictability will prevent them from making a commitment—for example, if they have a low willingness to bear uncertainty (McMullen and Shepherd 2006). Conversely, the lower the potential stakeholder perceives these elements to be, the more path dependent will the target of their commitment appear. If the perceived ends of this path dependence do not align with the stakeholder's means and goals, they may consider the commitment undesirable: *Is what I will be committing to what I actually want?*

Moreover, effectuation, being a process, includes an element of temporality. Interactions between entrepreneurs and stakeholders are not necessarily one-off affairs, and the commitment decision space may evolve over time. Effectual networks may become less effectual as they mature and grow to include more of the external world (Sarasvathy and Dew 2005b). As the process progresses, new or clearer goals and constraints can reduce uncertainty, ambiguity, isotropy, and equivocality surrounding the emerging market. A commitment opportunity revisited at a later date may become acceptable when a certain threshold of predictability is met. Moreover, effectuation is an intersubjective process (Sarasvathy et al. 2008), and ambiguity, isotropy, and equivocality can be reduced through the generation of intersubjective consensus (e.g., Townsend et al. 2018). Conversely, equivocality can be increased either through unanticipated actions made by familiar actors or via interactions with new actors—that is, new "equivocal displays" (Weick 1979).

Continued interactions at arm's length between an entrepreneur and a potential stakeholder (and/or other members of the effectual network) may lead to sensemaking (Weick 1979, 1995).

Through sensemaking, equivocality, and, consequently, ambiguity and isotropy may be reduced to the point at which an actual commitment of means, in exchange for voice, becomes desirable. Overall, whether a potential stakeholder perceives their commitment decision space as being characterized by unpredictability or path dependence, commitments are possible at either extreme. However, the nature of these commitments is influenced by the different reasoning modes used by those making the commitments.

3.2 Reasoning That Guides Stakeholder Decisions: Instrumental vs. Value Rational Action

Rationality and its relation to decision-making under uncertainty have been conceptualized in a wide variety of ways over the decades. Among these conceptualizations are Schumpeter's (1984) discussions on objective versus subjective rationality and Simon's (1976) arguments for a departure from formal or substantive conceptions of rationality toward procedural and bounded rationalities, which more realistically reflect the limitations and processes of human cognition. While Schumpeter's (1984) and Simon's (1976) conceptualizations of rationality are concerned with how to more realistically model intendedly rational human behavior (i.e., subjective rationality better accounts for behavior than objective rationality, and bounded rationality and procedural rationality better account for human behavior than global rationality or substantive rationality), another classical conception of rationality considers rational decision-making in relation to *social action*. We are referring to Weber's (1978) distinction between instrumental and value rationality. As defined by Weber (1978, 22), social action is that

> which includes both failure to act and passive acquiescence, may be oriented to the past, present, or expected future behavior of others. … The 'others' may be individual persons and may be known to the actor as such or may constitute an indefinite plurality and may

> be entirely unknown as individuals. … The economic activity of an individual is social only if it takes account of the behavior of someone else. Thus, very generally, it becomes social insofar as the actor assumes that others will respect his actual control over economic goods. Concretely, it is social, for instance, if in relation to the actor's own consumption the future wants of others are taken into account, and this becomes one consideration affecting the actor's own saving. Or, in another connection, production may be oriented to the future wants of other people.

According to Weber's (1978) definition, a stakeholder making a commitment to an effectual process is engaging in social action. This is important because social action incorporates not only the weighing of means, ends, and secondary results but also value-based criteria in relation to other people that might be considered "irrational" from a purely instrumental point of view. Although causal and effectual logics are consistent with a procedurally and boundedly rational actor making decisions under uncertainty—with causation emphasizing means and effectuation emphasizing ends—we believe that these logics only partly describe decision-making as social action. This is because Weber (1978) makes a critical distinction between instrumental and value rational action.

Instrumentally rational action is "determined by expectations as to the behavior of objects in the environment and of other human beings; these expectations are used as 'conditions' or 'means' for the attainment of the actor's own rationally pursued and calculated ends" (Weber 1978, 24). Conversely, value rational action is "determined by a conscious belief in the value for its own sake of some ethical, aesthetic, religious, or other form of behavior, independently of its prospects of success". (Weber 1978, 24–25). We believe that applying Weber's (1978) classical distinction between instrumental and value rationality is useful in formulating a clear and

parsimonious typology of stakeholder reasoning strategies. More specifically, we argue that instrumental and value rationality can be considered as forming extreme ends of a spectrum of potential reasons behind the decision to commit to an effectual process. Although there are justified arguments for why instrumental and value rationality are not truly dichotomous or easily separable (Oakes 2017; Raz 2017), we are not so much concerned with whether these types of rationality are dichotomous per se as we are interested in how decision-makers subjectively frame their choices for making a commitment. Using the concepts of instrumental and value rationality, we can also account for actions that are not intendedly rational (Figure 3)—that is, we can account for actions driven by impulse or influenced by affect (Lerner et al. 2018).

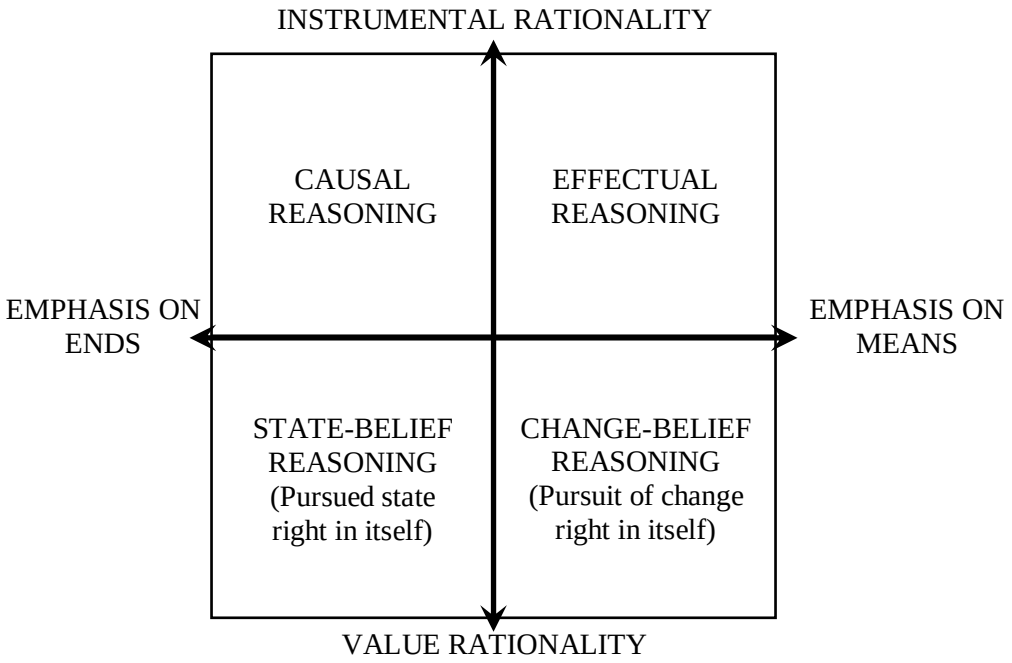

Figure 3. Four categories of reasoning guiding a commitment decision

We argue that causation and effectuation emphasize instrumental rationality[1]: they are both intendedly rational reasoning strategies useful for mitigating or overcoming problems that result from decision-making under uncertainty. Causal logic is the predictive logic of rational choice theory. Effectual logic, as a "straight inversion of rational choice theory" (Read and Sarasvathy 2005, 50), is "neither 'rational' in the traditional sense, nor a 'deviation' from rational behavior" (Sarasvathy et al. 2008, 50). On the one hand, causation is a reasoning strategy that relies on prediction and planning to avoid uncertainty and on calculations of expected returns adjusted for risk. On the other hand, effectuation is a non-predictive reasoning strategy that mitigates the potential downsides of uncertainty by imagining what can be done with the means at hand and by only investing what one can afford to lose, stitching together partnerships, and leveraging unexpected contingencies (Sarasvathy 2001; Dew et al. 2009). Accordingly, we conceptualize causal reasoning as the ends-oriented manifestation of instrumentally rational decision-making and effectual reasoning as the means-oriented manifestation of instrumentally rational decision-making. However, conceptualizing stakeholder commitments as only being either effectual or causal (or a combination of the two) implies neglecting potential commitment logics that emphasize value rationality. Therefore, we must account for value-based decision-making.

Weber (1978, 46) stated the following: "The more unconditionally the actor devotes himself to this value for its own sake, to pure sentiment or beauty, to absolute goodness or devotion to duty, the less is he influenced by considerations of the consequences of his action." Adapting this statement to the present discussion, we treat value rational decision-making as involving decisions made in pursuit of subjective values (considered to be right in themselves) while paying less attention to how the environment surrounding the decisions might impact future

[1] We would like to note that effectual reasoning does not preclude value rationality. However, we argue that the way in which effectual decision-making is generally framed in the literature tends to favor instrumental considerations.

consequences. Therefore, to complete the picture of the various orientations that can potentially underlie a commitment decision along the dimensions of (1) means versus ends and (2) instrumental versus value rationality, we propose to define ends- and means-oriented value reasoning. An actor following *state-belief reasoning* is someone who pursues some imagined state, irrespective of the cost or likelihood of success, in the value rational belief that the imagined state is right in itself. Conversely, someone following *change-belief reasoning* emphasizes using their means to try to enact change as they have the value rational belief that to do so right in itself and is, again, willing to act irrespective of the cost or likelihood of success.

4 A typology of stakeholder commitments

We propose that four commitment ideal types (between which the world of possible commitments emerges) correspond to the four types of reasoning strategy introduced in the previous section: effectual, causal, state-belief, and change-belief. Using this conceptually derived and interrelated set of ideal types (Doty and Glick 1994), we examine the ways in which stakeholder commitments are likely to be qualitatively different when guided by these different forms of reasoning.

4.1 Type 1: Causal Commitments

A causal commitment is an ends-oriented commitment made by an instrumentally rational actor. The stakeholder reasons that by making the commitment, they will ultimately achieve some preconceived end or goal on the basis of risk-adjusted expected return. Such a commitment can be conceptualized as an instance of Kirznerian opportunity recognition or discovery (Kirzner 1997; Sarasvathy et al. 2010). More specifically, when markets are allocative, the recognition of opportunities entails matching a known supply to a known demand. An individual demonstrating entrepreneurial alertness (Kirzner 1973, 1997) may possess knowledge concerning unfulfilled

supply or demand and recognize the commitment as an opportunity to produce a novel resource combination to satisfy such supply or demand. This recognition is not necessarily immediate and may emerge over time through interactions between the potential stakeholder and the entrepreneur or other members of the effectual network, as equivocality is resolved through collective sensemaking.

A simple example of a commitment based on causal logic would be one where the emerging market relates to a novel technology that could potentially be merged, without much alteration, with a stakeholder's existing product(s), resulting in financial gain via either increased profits or reduced costs. In such a case, with the emerging market in its present state (or a predictable future state), and given the stakeholder's means and goals, it may be possible to make adequate calculations of expected returns and conduct competitive analysis. This is because the decision space is characterized by normal uncertainty and risk, with little ambiguity. The commitment, whether it be of equity or some other required resources, will still share in the risk and return of the venture; however, such commitment is clearly goal driven.

McMullen and Shepherd (2006) simplified Milliken's (1987) three types of uncertainty to a set of questions that potential actors might ask themselves regarding their relationship with the environment: (1) What is happening out there? (state uncertainty); (2) How will it impact me? (effect uncertainty); and (3) What am I going to do about it? (response uncertainty). The answers that a stakeholder making a commitment based on causal reasoning would likely provide are as follows:

1. What is happening out there? The decision space surrounding my potential commitment is relatively unambiguous and predictable.

2. How will it impact me? If things go as I predict, my commitment will result in an increase in utility or a decrease in disutility for me or my firm.
3. What am I going to do about it? I shall make a commitment based on my assessment of calculated risk and expected return.

4.2 Type 2: Effectual Commitments

An effectual commitment is a means-oriented commitment made by an instrumentally rational actor. A stakeholder making an effectual commitment starts from their means—their identity, knowledge, and networks (Wiltbank et al. 2006)—and makes a commitment in exchange for voice in shaping some focal market in a way that will ultimately benefit them via increased profit or reduced costs. Unlike in a causal commitment, however, the stakeholder does not have clear goals, merely generalized aspirations. Such a stakeholder can be conceptualized as a Schumpeterian entrepreneur, who views opportunities as something that can be created using one's individual's intellect (Alvarez and Barney 2007; Chandler, DeTienne, and Lyon 2003; Sarasvathy et al. 2010). This stakeholder will engage with others in the effectual network (to whom the commitment was directed) to effectually experiment with different resource combinations and leverage resulting contingencies. Stakeholders committing to an effectual process using this reasoning would answer McMullen and Shepherd's (2006) questions as follows:

1. What is happening out there? It is not clear how I could combine my means with those of others through a commitment, but I can imagine different ways in which mutually beneficial combinations might be possible.

2. How will it impact me? Although I cannot accurately predict what will happen after my commitment, I am confident in my ability to co-create the future with others using my voice in a way that will ultimately increase my utility or decrease my disutility.
3. What am I going to do about it? I will commit based on the understanding that by doing so, I buy into a process that will allow me to use my identity, knowledge, and networks to successfully co-create the future in a way that will benefit me.

The commitment types discussed so far, namely causal and effectual commitments, are consistent with stakeholder commitments described in the extant effectuation literature (e.g., Sarasvathy and Dew 2005b). We now turn to potential commitments on which the extant literature has thus far been silent—that is, commitments based on value rationality.

4.3 Type 3: State-Belief Commitments

As in the case of causal commitments, an actor making a state-belief commitment is acting toward a preconceived desired outcome. Unlike in a causal commitment, however, the commitment is not contingent on the outcome being predictable. Instead, actors who make state-belief commitments are acting on the basis that the imagined outcome, or state, will eventuate (despite there being no predictive evidence for this belief) or that commitment is somehow "right" at an ideological level. The state-belief reasoning stakeholder may exercise the causal logic of goal focus but will not exercise the related logics of risk-adjusted expected return, the exploitation of existing knowledge, calculative prediction, or competitive analysis. When the commitment is made to an imagined future state that the stakeholder considers to be ideologically desirable, conceptually speaking, this type of stakeholder resembles an entrepreneur taking a visionary approach (Wiltbank et al. 2006). The visionary approach involves a strong willingness to commit resources to a particular vision. Although a successful

visionary approach involves proactively bringing the imagined future into fruition, if stakeholders have no factual basis for their assessments that they have the ability to control the desired outcomes, they may, instead, base their decision on value rational logics, such as trust, optimism, or overconfidence.

State-belief commitments can be made to an individual or an outcome. In the former case, reasons for committing may include the stakeholder having a close relationship with the entrepreneur (such as family ties, long-term friendship, or romantic partnership). In this case, stakeholders may commit because they hope that the individual to whom they are committing will be successful without needing to calculate the likelihood of success. Such commitment may be based on non-calculative "personal trust" in the individual—that is, the trust "reserved for very special relations between family, friends, and lovers" (Williamson 1993, 484). When stakeholders do not have preexisting close relationships with the individuals to whom they are making commitments, they may, instead, exercise other forms of non-calculative trust, such as "over-trust" (Karri and Goel 2008; Goel and Karri 2006; Goel, Bell, and Pierce 2005), "reflective trust" (Adler 2001), or irrational "blind trust." In the latter case, they may be inspired by the focal entrepreneur as a "charismatic leader" (Brouwer 2002; Weber 1978).

When a stakeholder makes a state-belief commitment to an imagined outcome, the stakeholder may be inspired by what the venture represents (e.g., when the venture is addressing a perceived social need) or may have a propensity to gamble and anticipate lucrative returns based on some kind of gut instinct (Huang and Pearce 2015). In place of causal behaviors, such commitments may be governed by value rational logics. "Non-rational" logics identified in the literature include, but are unlikely to be limited to, predictive overconfidence (Baron 2000; Busenitz and Barney 1997), optimistic overconfidence (Griffin and Varey 1996), and analogical

reasoning or associative thinking and heuristic reasoning (Busenitz and Barney 1997; Cornelissen and Clarke 2010; Gavetti et al. 2012; Jones and Casulli 2014). The effect of these logics is that their users eschew the need for calculating risks (or make baseless estimations of expected returns), as in the case of casual reasoning, without turning to more effectual strategies to avoid the downsides of failure (whose potential may be ignored) or to control a desired outcome.

Such stakeholders would answer McMullen and Shepherd's (2006) questions as follows:

1. What is happening out there? I do not have clear knowledge of, nor understand well, the situation surrounding my commitment.
2. How will it impact me? I do not know if my commitment will result in material gain for me, but I feel that I am "doing the right thing".
3. What am I going to do about it? I shall make a commitment to the individual, venture, cause, or outcome I am supporting, as this is acceptable to me on a personal/ideological/affectual level, regardless of the likelihood of success.

In summary, while ends-oriented causally reasoning stakeholders make commitments based on predictive information, ends-oriented state-belief stakeholders may fall back on logics that do not rely on calculable predictive information. As such, a state-belief commitment is an ends-oriented commitment that can be made in spite of high unpredictability in the commitment decision space (see Figure 2). This leads us to the first of our propositions.

Proposition 1. Stronger state-belief reasoning enables commitments under high unpredictability.

4.4 Type 4: Change-Belief Commitments

A change-belief commitment is driven by a stakeholder's desire to co-create and enact change as part of their values and/or identity. Although this is somewhat similar to an effectual commitment, a change-belief commitment is not contingent on any (calculated) estimation that the co-creative process will actually be influenceable using the actor's means. While the effectual logic of means orientation is present, a stakeholder acting based on change-belief reasoning may not consider affordable losses or whether they will be able to use the purchased voice to influence the future shape of the market or exploit potential contingencies. Instead, they have a value rational belief that exercising their means to enact change is right in itself.

A change-belief reasoning stakeholder may be motivated by entrepreneurial passion (Cardon et al. 2009) and the belief that the focal process represents opportunities not apparent to those already committed to it. Conceptually, this type of stakeholder resembles the Lachmannian entrepreneur who is intrinsically motivated to exercise "creative imagination" and who wishes to incite disequilibrating change (Chiles, Bluedorn, and Gupta 2007; Chiles, Gupta, and Bluedorn 2008) or someone driven simply by the "joy of creating" (Schumpeter 1934, 93-94). Such stakeholder commitments may be "autotelic" in nature (Csikszentmihalyi 2014) because stakeholders simply want to be part of a co-creative process—for them, this kind of creative action is a reward in itself.

At an early stage of the development of an effectual network, while the commitment decision space still abounds in ambiguity and equivocality, this type of stakeholder may be welcomed into an effectual network as much as an effectually reasoning one. However, Sarasavathy and Dew (2005b, 549) stated the following: "As the network adds members … there is less room for transformational negotiations with newcomers." For this reason, a change-belief stakeholder may

face some initial resistance from the extant effectual network if they are seen to be a threat to a status quo already established by existing members. A commitment from such a stakeholder may not be perceived as necessary by network members when the process has already reached a point of high path dependence—other stakeholders may be unwilling to accept a new member who is disruptive to the network's now well-defined goals. In fact, it may be impossible for a commitment to be received at all (the process is closed to outsiders beyond arm's-length transactions).

Sarasvathy and Dew (2005b, 549) suggested that when an effectual network reaches a point of high path dependence, "new members have to take most of [the effectual artifact] as they find it, or forgo membership in the network." However, this may not be true for the change-belief reasoning stakeholder. While high path dependence in the commitment decision space means that an effectually reasoning stakeholder either adopts more causal reasoning or forgoes commitment, change-belief reasoning stakeholders may still commit by basing their commitments on value rational logics, such as personal overconfidence (Griffin and Varey 1996; Sarasvathy, Menon, and Kuechle 2013). Personal overconfidence is the "overestimation of one's knowledge (more generally, the overestimation of the validity of one's judgment) when there is no personally favored hypothesis or outcome" (Griffin and Varey 1996, 228). Personal overconfidence may lead a change-belief-driven individual to overestimate their ability to lead a co-creational process in a different direction once the process has already reached the state of path dependence. Such stakeholders may be important instigators of renewal by restarting (or simply starting) effectuation processes once a stable market has emerged.

This category of stakeholder would answer McMullen and Shepherd's (2006) questions as follows:

1. What is happening out there? The co-creative process to which I am making a commitment has well-defined goals, actors, and structure.
2. How will it impact me? Although I have a clear understanding of what kind of market my commitment is contributing to, my interests lie elsewhere.
3. What am I going to do about it? I shall make a commitment to get a foothold in this process based on the value-based belief that once I have done so, I will be able to use my influence to direct the process toward a new market of my choosing.

In summary, value reasoning enables a means-oriented commitment to be made in a commitment decision space characterized by high path dependence (see Figure 2) that would otherwise drive an effectually reasoning stakeholder to look elsewhere.

Proposition 2. Stronger change-belief reasoning enables commitments under high path dependence.

4.5 Scenarios Predicting the Likelihood of Commitment and Corresponding Commitment Type

Based on the preceding discussion, when a stakeholder has the opportunity to commit to joint courses of action in an effectuation process, we propose three variables that, when combined, can predict the likelihood of a commitment being made and determine the resulting commitment type: (1) whether the stakeholder perceives the commitment decision space as more unpredictable or more path dependent (see Figure 2), (2) whether the stakeholder's reasoning is governed more by instrumental rationality or value rationality, and (3) whether the stakeholder is more means oriented or more ends oriented in their choice of action (Table 1). As discussed in Section 2.1, while interacting with an entrepreneur or other members of an effectual network, a potential stakeholder will encounter an opportunity to commit, and their commitment decision

space will be characterized by interacting elements of uncertainty, ambiguity, isotropy, and equivocality. On the one hand, the more elements at play, the less predictable the decision space. On the other hand, the fewer the elements, the more path dependent the decision space will appear.

Table 1

Likelihood and Type of Commitments under Uncertainty and Path Dependence

Perceived Commitment Decision Space (from Figure 2)	Reasoning Orientation	Action Orientation	Commitment Likelihood	Resulting Commitment Type
Unpredictable	Instrumentally Rational	Means-Oriented	Possible	Effectual
Unpredictable	Instrumentally Rational	Ends-Oriented	Unlikely	No Commitment/ Weakly Causal
Unpredictable	Value Rational	Means-Oriented	Likely	Effectual and Change-belief
Unpredictable	Value Rational	Ends-Oriented	Possible	State-belief
Path Dependent	Instrumentally Rational	Means-Oriented	Unlikely	No Commitment/ Weakly Effectual
Path Dependent	Instrumentally Rational	Ends-Oriented	Possible	Casual
Path Dependent	Value Rational	Means-Oriented	Possible	Change-belief
Path Dependent	Value Rational	Ends-Oriented	Likely	Causal and State-belief

Table 1 summarizes the different scenarios for making commitments, their likelihood, and the different types of reasoning that guide them. We examine these scenarios in more detail below.

4.5.1 Commitments under Unpredictability

If stakeholders perceive a commitment decision space as highly unpredictable, and if they are reasoning based on instrumental rationality (i.e., they recognize the unpredictability of the decision space and wish to adopt a calculative approach that mitigates potential negative consequences), then it is possible they could make a means-oriented commitment using the non-predictive logic of effectuation. This would result in an effectual commitment. Given the same unpredictable decision space but with an instrumentally rational stakeholder who is either unable or unwilling to adopt a means approach, it is unlikely that a commitment will be possible. The

perceived unpredictability makes ends-oriented causal decision-making difficult and risky because ends cannot be reliably calculated. If a commitment is still made, it would be small (based on a predictable part of a larger and less predictable process) or would require the use of other non-causal logics (e.g., effectuation's affordable loss principle), resulting in a weakly causal commitment.

Considering the same unpredictable commitment decision space but viewed by an actor who is driven by value rationality over instrumental rationality, the likelihood of a commitment is different. When the potential stakeholder is value rational and is predisposed toward means-oriented action, a commitment is likely. The decision space is suitable for means-oriented action that will mitigate the negative consequences of unpredictability, and the stakeholder believes that using their means is right in itself. In such a case, the resulting commitment will be an effectual *and* change-belief commitment. Conversely, if the actor is value rational but predisposed toward ends-oriented action, a commitment may still be possible despite perceived unpredictability—that is, a state-belief commitment. Such an actor may have a strong value-based belief in some imagined state that they believe the commitment represents and, because of this, they would have a greater willingness to bear uncertainty than a more instrumentally rational stakeholder.

4.5.2 Commitments under Path Dependence

Turning to more path-dependent commitment decision spaces, it is possible for an instrumentally rational actor facing such a decision space to use ends-oriented causal reasoning when making a commitment. In Figure 2, the commitment decision space is path dependent when the opportunity to contribute to co-creation through a commitment exists in a predictable environment. The impact of the future environment or environmental changes is predictable, and there are few ambiguities about how the network of actors involved in the process could or

should respond to this environment given clear extant goals and preferences already established by those network members. When potential stakeholders compare their means and goals to the means and goals presented to them by entrepreneurs or other network actors, the stakeholders can use this perceived path dependence to make ex ante predictions based on clear goals and expected returns.

If an instrumentally rational actor does not have clear goals, meaning that they are unable to act in an ends-oriented way, they might, instead, frame the commitment decision space using means-oriented effectual reasoning. However, if they perceive the process to which they will be committing to be path dependent, they may not see the possibility of making a commitment based on effectual behaviors, which rely on the potential for actors to transform their environments through action. As such, a means-oriented commitment in such circumstances is unlikely. If a commitment is made, it will be made with the knowledge that certain goals are fixed and the potential for non-predictive action is limited. Therefore, the commitment can only be weakly effectual.

When viewed from the perspective of a value rational actor, the likelihood and the resulting type of commitment will be different. If the stakeholder believes that committing their means to co-creation with others in the network is somehow right in itself—that is, if the actor is change-belief reasoning stakeholder—they may make a commitment despite apparent path dependence. In such a case, the stakeholder is willing to ignore path dependence based on the belief that they will be able to use the means at their disposal to influence the process, even when goals seem fixed and the scope for action that diverges from the process's current trajectory seems constrained. Finally, if a value rational actor perceives that the co-creative process to which a commitment is possible is on a path-dependent trajectory and that this trajectory is directed

toward ends that the potential stakeholder believes are right in themselves, then a commitment is likely. Such a commitment would be both causal *and* state-belief-based. The stakeholder will have a value-based belief in a desired future, and it is predictable that this desired future will eventuate through the commitment, given the path dependence perceived in the process.

5 The Effects of New Commitments on the Effectual Process and Network

We have now examined why and under what circumstances stakeholders following different forms of reasoning might make commitments to future co-creation activities with others in effectuation processes. Now, we turn our attention to the potential effects that such commitments might have on the process and network going forward. Before the commitment, a stakeholder's decision-making is subjective and individual and depends on their idiosyncratic goals and the means at their disposal. Following commitment, however, decision-making becomes intersubjective—that is, it involves ongoing negotiation and collective sensemaking (Weick 1979, 1995) regarding new courses of action toward established goals.

The addition of new means and goals alters the predictability or path dependence of the network's collective decision space. This creates equivocality around the questions of "What are we doing?" and "What should we do?" This newly created equivocality emanates ripples of enactment and sensemaking activity through the stakeholder community. Extant stakeholders must decide whether to maintain their commitments to the status quo, modify their commitments, or withdraw their commitments from the effectuation process altogether. Using our typology of four stakeholder commitments, we can draw some general inferences about how each type of commitment affects the market co-creation process in terms of goals, means, and constraints and, in turn, impacts the existing network's relationships and behaviors as well as the intersubjective market co-creation space (Table 2).

Table 2. Effects of Different Commitment Types on the Market Co-creation Process

	Commitment Type			
Issue	Causal	Effectual	State-Belief	Change-Belief
Effect on immediate stakeholder role	Purchase voice to pursue a preconceived end or goal through predictive action under risk.	Purchase voice to generate new combinations of means through non-predictive action under uncertainty.	Purchase voice to contribute to an end or goal deemed right in itself, whether or not the end or goal is predictively achievable.	Purchase voice to generate new combinations of means, as doing so is deemed right in itself, whether or not new combinations of means are possible.
Effect on network goals	New, clear goals are introduced or existing goals are reinforced.	Both new generalized aspirations and at least one specific new goal shaped through effectual commitments.	Existing goals are reinforced or remain unchanged.	New generalized aspirations are introduced.
Effect on network resources	New resources are introduced but limited to those specifically necessary for stakeholders to achieve their goals.	Various new means are introduced in the form of stakeholders' identities, knowledge, and networks.	New resources are introduced, with possible specificity to preconceived ends or goals.	Various new means are introduced in the form of stakeholders' identities, knowledge, and networks.
Effect on constraints	Constraints imposed will be proportional to means invested	Constraints will pertain to specific goal changes.	Constraints on how value-based goals will be achieved rather than on the goal itself.	Constraints will concern stakeholder roles.
Effect on network relationships and behavior	Conflict may occur if new goals are inconsistent with the goals of the existing stakeholders.	This may increase effectual churn while avoiding conflict.	This is less likely to cause conflicts, as existing goals are maintained and contribute to effectual churn.	This is likelier to result in conflict than state-belief commitments, but less so than causal commitments, and is less likely to contribute to effectual churn than effectual commitments, but more so than state-belief commitments.
Overall effect on market co-creation	Signal that the market has become more predictable and less shapable.	Keep the market shapable.	Emphasize existing goals or aspirations while keeping the market relatively shapable.	Little or no impact on the shapability or predictability of the market unless new markets are created.

5.1 Effects of New Commitments on Network Relationships and Behavior

We propose that new commitments may impact the intersubjective market co-creation space in two important ways: (1) by affecting conflict or (2) by affecting "effectual churn." Conflict is likely to occur among new and existing stakeholders when new goals are introduced that are at odds with preestablished ones. Conversely, effectual churn occurs when means and possible effects are continuously reassessed through social interactions among stakeholders, and the process does not progress (Fischer and Reuber 2011). Kerr and Coviello (2019a, 2019b) suggested that such churning may be a result of lack of resource specificity, meaning that no constraints are put in place to direct network activities down a narrower path. Below, we explore how the different types of commitment we have explicated might affect effectual network relationships and behaviors in terms of conflict and effectual churn. We also formulate additional propositions.

A stakeholder who makes a causal commitment to an effectual network introduces clear goals by default. Imagine, for example, an established retailer negotiating with a startup app developer to potentially create a new sales platform. The potential stakeholder knows exactly what they want from the commitment and commissions an entrepreneur and the latter's extant network to fulfill this goal, thereby providing the network with new means. However, these means would be limited to what the potential stakeholder believes is required to achieve their goal (e.g., monetary investment and specific market data). Such a commitment would place significant constraints on what the market at the center of the process should be. If the causal stakeholder's goal were easily achieved by the network as a peripheral activity, a commitment of this nature would establish rigid constraints only for that area. However, if the commitment were significant, considering the network's overall activities, the commitment would result in rigid constraints across the board.

If the new goals that a causal commitment introduces to the process are at odds with the goals or sensibilities of the existing members, this is likely to produce conflict. The conflict may be resolved through the process of sensemaking between the new stakeholder and those affected by the

commitment—for example, those involved may intersubjectively switch their reasoning strategies to something less rigidly predictive than "pure" causal reasoning. If the conflict cannot be resolved, affected stakeholders may withdraw from the process. However, a causal commitment is likely to introduce new resources with high specificity to achieving the stakeholder's predetermined goals. Therefore, such a commitment is likely to decrease effectual churn.

Proposition 3a: Causal commitments are likely to increase conflict and decrease effectual churn.

Effectual reasoning begins with a general aspiration or aspirations rather than concrete goals (Sarasvathy 2001). Therefore, a commitment based on this form of reasoning may introduce one or more goals to the effectual network, but they would not be clear or well formed. Likewise, because stakeholders using effectual reasoning are not guided by clear goals, the means they will contribute are unlikely to be particularly specific or tangible beyond whatever personal resources they are willing to put forward to purchase voice (although intangible resources, such as knowledge, can likewise be used to purchase voice). The means are likelier to be embedded in stakeholders' identities, knowledge, and networks. Furthermore, because the contributed goals are vague and the means nonspecific, it is not in such stakeholders' interests to impose strong constraints upon the network. They will be flexible and open to negotiation about possible trajectories for the effectual process.

Proposition 3b. Effectual commitments are likely to increase effectual churn while resulting in fewer conflicts than causal commitments.

State-belief commitments tend to reflect the network goals that exist when such commitments are made and, therefore, do not add any new goals. Commitments made by state-belief stakeholders will provide the network with new means; however, these means are likely to merely be whatever material resources the stakeholders choose to invest, whether it be cash or a non-monetary contribution (e.g., free advertising or the use of real estate). As state-belief commitments are not contingent on predictive planning and action, they are unlikely to produce conflict. However,

conflict may arise as time passes if the goals toward which the stakeholder committed change (e.g., stakeholders may view such changes as a betrayal of trust). state-belief commitments may lower effectual churn via the specificity of resources contributed to existing goals, and this effect may be magnified by increasing the number of state-belief stakeholders who share the same envisioned ends.

Proposition 3c. State-belief commitments are likely to result in fewer conflicts than causal commitments and in less effectual churn than effectual commitments.

Similar to an effectual stakeholder, a commitment by a change-belief stakeholder will influence the network's goals and means. Such a stakeholder may introduce one or more new potential goals into the network, although such goals will not be well formed, and the means will be mostly embedded in the individual's identity, knowledge, and networks. These means will be supplemented by whatever additional tangible resources, such as equity investment, that the stakeholder brings to the network in exchange for voice. Moreover, the change-belief reasoning stakeholder differs from the effectual stakeholder in not worrying about whether they will realistically be able to enact change. Consequently, should a change-belief commitment be accepted by existing network members at a time when the process has reached a high level of apparent path dependence, this would represent the loosening of constraints (i.e., at least some network members are willing to explore new courses of action). This recognition of alternative courses of action may lead to conflicts, and a loosening of constraints may increase effectual churn. However, as change-belief-driven stakeholders' commitments are not contingent on their abilities to actually influence the environment, these effects will not be as pronounced as they would be for causal or effectual stakeholders.

Proposition 3d. Change-belief commitments are likely to produce more conflicts and effectual churn than state-belief commitments but fewer than causal and effectual commitments.

In sum, we propose the following general proposition concerning the effects of value rational versus instrumentally rational commitments on conflict and effectual churn in the market co-creation process:

Overall Proposition 3: Value rationality is more likely to mitigate both conflict and effectual churn than instrumental rationality.

5.2 Effects of New Commitments on Market Co-creation

Reasoning strategies are not static. After making commitments, stakeholders will engage with others, and through interaction and sensemaking, they may adapt their forms of reasoning, attitudes to means and ends, and orientations toward values-driven and instrumental action. Through this intersubjective process, equivocality between actors will evolve and increase or diminish, affecting other elements, such as isotropy, ambiguity, and uncertainty, in the collective market creation space. Consequently, the market co-creation space may become more shapable or more predictable. Below, we explore what different commitments imply about the shapability and predictability of the market co-creation space, and we put forward our final propositions.

Causal commitments indicate that the market has become more predictable, at least in relation to the area in which the commitment was made. Moreover, causal commitments decrease the ambiguity of goals. In turn, reduced isotropy regarding the specificity of resources, as well as the overall reduction in uncertainty, increases the predictability and path dependence of the process while reducing the shapabilty of the resulting market.

Proposition 4a. Causal commitments signal that the market has become more predictable and less shapable.

Effectual commitments introduce new means and potentially new aspirations into the market co-creation process. However, such means tend to lack specificity, and aspirations remain general. As such, effectual commitments do not overly constrain the collective future actions of other

stakeholders already committed to the process. In fact, effectual commitments may increase equivocality in the process as actors negotiate how their means can be usefully combined.

Proposition 4b. Effectual commitments keep the market shapable.

State-belief commitments promote predictability insofar as they highlight the value of existing goals or aspirations. For example, actors in a nascent market co-creation process may be working to produce sustainable fashion. Before many of the finer details of how they will achieve this goal are clear, a commitment of financial capital for equity from a state-belief reasoning stakeholder may highlight the value of "sustainable fashion" as a goal. While this development will not overly affect the shapablity of the process, it will reduce ambiguity in terms of goals, with actions in the process less likely to diverge in terms of values (e.g., fast fashion), even if the stakeholder who made the commitment has no desire or ability to exert control over the process.

Proposition 4c. State-belief commitments emphasize goals while continuing to keep the market at least partially shapable.

Change-belief commitments are not contingent on stakeholders' estimations of whether they will realistically be able to redirect collective action toward new transformations using the instrumental logics of effectuation. Stakeholders may use commitments to insert themselves into processes that are predictably leading toward given ends because the stakeholders are driven by the value-based belief that, somehow, they will be able to combine their means with those of others in the network and enact change in the co-creation process. Unless they can convince those who are already active in the process to break from the established path, they are unlikely to manage steering the process in a new direction. Therefore, the shapability of the market and its predictability will remain unchanged.

Proposition 4d. Change-belief commitments have little to no impact on the market's predictability or shapability unless such commitments result in new courses of action.

In sum, we make the following general proposition concerning the effects of value rational versus instrumentally rational commitments on the predictability and shapability of the market co-creation process:

Overall Proposition 4. While instrumental rationality is useful when the market co-creation space is either predictable or controllable, value rationality is more useful when the market co-creation space is either unpredictable or less controllable.

6 Discussion and Future Research

In Section 2.2, we argued that theorizing on stakeholder commitments in effectual processes offers a fertile ground for theoretical development. In the extant literature, stakeholder commitments have been invariably conceptualized from the perspective of the effectual entrepreneur or an actor already operating in an effectual process. At the same time, the question of *why* stakeholders make commitments has been underexplored. Consequently, various issues have remained unaddressed: How do stakeholders using different logics interact when co-creating? What happens to established commitments when new commitments are made based on the same or different logics? How do different commitments affect co-creation in effectuation processes going forward? Using our typology presented in this article, we have taken the first steps in answering these questions. Now, we consider the possibilities of a new research agenda based on our typology.

6.1 Effectuation from a Stakeholder Perspective

We would first like to acknowledge that the way in which we have presented causation and effectuation (as being two sides of instrumental rationality) risks misconstruing causation and effectuation as perfect opposites, which they are not (Perry, Chandler, and Markova 2012). As effectual reasoning does not preclude value rationality, the theoretical separation we have established in our conceptualization is a potential limitation to the arguments we have made. Therefore, our first suggestion for future research on the stakeholder perspective in effectuation processes would be to investigate the following research question: *What is the role of values in*

effectual decision-making? Such research would help clarify the boundaries between different decision-making logics.[2]

Following from this, we believe that future research on effectuation should investigate stakeholders' value rational motivations for forming partnerships with entrepreneurs and other actors in co-creative effectuation processes. Our conceptualization suggests that a stakeholder's personality or positions (in relation to whom they know in an effectual network) and reasons for committing are vital factors in how commitments are negotiated in the first place. One potential research question is as follows: *How do commitment negotiations in effectual processes differ depending on the forms of reasoning employed by potential partners?* Empirical research specifically focused on different stakeholders in the same focal market co-creation process should examine how both instrumental and value rational logics influence actors' decisions to commit means and what these means are, as well as actors' expectations concerning the commitments. Such research could tie into the extant literature on the role of affect and identity in entrepreneurial action and resource seeking by exploring how affect and identity influence both the underlying logic of the commitment decision and the resulting commitment—that is, what is committed, to whom, and what is expected in return.

Furthermore, a stakeholder-centric research perspective should consider the way in which stakeholders other than the central entrepreneurs/founders engaged in effectuation processes interact with one another. A research question along these lines could look as follows: *How do existing stakeholders in effectual networks respond to new commitments by actors with potentially different reasoning modes?* As our conceptualization suggests, conflict may arise when partners driven by specific goals encounter new commitments by stakeholders who are driven by different goals. We can imagine that the concept of voice may play an important part in such situations, with actors potentially competing over influence with one another in effectual networks, based on how

[2] We thank one of the reviewers for this idea.

important their contributed means are to the goals of others. This raises the question of who controls the co-creation process, in which control is an important element. Such research would link up with the literature on resource dependence (Newbert and Tornikoski 2013; Pfeffer and Salancik 1981) by exploring where the control of effectuation processes resides and how this relates to the resources committed.

6.2 Diverse Reasoning in Effectuation Processes

Our theorizing suggests that the type of reasoning held by a stakeholder once they make a commitment to market co-creation will influence the way in which the stakeholder will behave in relation to the process—namely, the types of decision-making logics and heuristics that they will employ. Future research should ask the following question: *How does the overarching reasoning strategy used by stakeholders in effectual processes influence their decision-making?* The behaviors that can be associated with the state-belief and change-belief reasoning that have been discussed in this article include trust, passion, overconfidence, and analogical reasoning. Another potentially value rational behavior, altruism (Simon 1993), has been explored as part of effectual partnership, and the literature on psychology and economics abounds with many more examples of decision-making that is not inherently instrumental in nature (Rabin 1998). Empirical investigations into how these different logics and heuristics interact and combine with the established causal and effectual behaviors would undoubtedly lead to new insights into effectuation processes.

Furthermore, there is an important temporal aspect of effectuation as a process that needs to be examined using the lens of stakeholder reasoning. In this article, we have suggested that commitment decisions may be broadly categorized into four types; however, rather than being static, human motives are in a state of constant flux. To explore this point further, future research should pose the following question: *How do stakeholders' reasoning modes in effectual processes combine and evolve over time?* Relatedly, Read and Sarasvathy (2005) proposed that, as effectual processes mature and become more causal, effectual entrepreneurs may choose to leave the process

that no longer requires their effectual expertise. It would be interesting to explore whether other stakeholders in effectual processes choose to exit once circumstances change in a way that no longer matches their initial motivations or decide to update their modes of reasoning to suit the new realities. Future research should pose the following question: *How do changing dynamics in effectual networks affect the retention of stakeholders who follow different reasoning modes?*

6.3 Implications for Effectuation Processes of Stakeholders with Diverse Reasoning Modes

Most of the extant effectuation literature has focused on either the individual as the primary unit of analysis (e.g., the effectual entrepreneur) or the dyadic relationship between the effectual entrepreneur and stakeholders. However, effectual processes are about networks of loosely connected actors co-creating markets in which they have, to various degrees, invested. The process is inherently intersubjective, and our conceptualization opens a path for a structured investigation of this intersubjectivity. For example, future research could pose the following question: *How do different combinations of stakeholder types affect market co-creation processes?* Based on our typology, we can imagine various stakeholder configurations that may result in dramatically different effectuation processes. Take, for instance, a process involving one effectual entrepreneur and a large number of state-belief stakeholders, each committing a small amount of means, as is the case in crowdsourcing, or a single resource-rich entrepreneur buying a relatively mature startup on the basis of change-belief reasoning, thereby reinjecting uncertainty into a formerly path-dependent process. Empirical investigation comparing and contrasting different effectual processes based on their stakeholder configurations would lead to novel theoretical developments.

Finally, effectuation processes denote a market co-creation space around an emerging market as an artifact, with the uncertainties, ambiguities, and isotropy therein being subjectively perceived by each committed stakeholder. Our theorizing suggests that each new commitment alters this co-creation space for every member and that different forms of reasoning behind commitments alter the co-creation space in diverse ways. New partnerships invariably lead, at least initially, to new

equivocality, which can only be reduced through intersubjective sensemaking processes. Future research should consider the following question: *How do intersubjective sensemaking processes between stakeholders with diverse reasoning modes drive the collective co-creative action of effectual networks?* Different outcomes may result from sensemaking driven by value rational rather than instrumental reasoning. Through persuasiveness (Baron 2008, 2000) and charisma (Burns et al. 2016), an entrepreneur or another effectual stakeholder may persuade others in the effectual network to exercise value rational decision-making criteria, such as reflective trust or over-trust, rather than the calculative and predictive criteria of causal reasoning. Empirical investigations into collective sensemaking in market co-creation processes can lead to better insights into how the question "What should I do?" from Sarasvathy and Dew's (2005b) dynamic model of the effectual network becomes the intersubjective question "What should we do?"

7 Conclusion

The aim of this article has been to contribute to the theory on effectuation as a process by addressing what we regard to be a key limitation in the field, namely a lack of theorizing focused on stakeholders. Scholarship on the role of stakeholder commitments in effectuation processes has changed little since the early conceptualizations by Sarasvathy (2001) and Sarasvathy and Dew (2005b), in which stakeholder commitments are assumed to be based on the means-oriented rationales of the effectual entrepreneur. In this article, we have begun answering the following question: Why do stakeholders commit to co-creation in effectuation processes? We have argued that when it comes to the multi-actor, intersubjective process of entrepreneurial market co-creation, as described by effectuation, we must go beyond the classification that divides reasoning into either effectual or causal, and we must consider forms of reasoning and logic that, rather than being based exclusively on instrumental rationality, also include value rationality. While different stakeholders in entrepreneurial processes may be driven by any number of reasons, the typology elaborated in

this article offers a parsimonious yet conceptually powerful and meaningful way of categorizing stakeholder rationales and predicting common behaviors.

This recognition of the importance of value rationality (and its state-belief and change-belief kinds) offers a more complete understanding of the effectuation process and provides a new link between effectuation theory and other entrepreneurship and decision-making theories. A stakeholder-centric perspective that recognizes value rational action opens up effectuation theory to other discussions in entrepreneurship studies on the roles of affect, trust, and persuasive leadership and demonstrates how these different concepts and constructs can be connected to effectuation in a systematic and logical manner.

References

Adler, Paul S. 2001. "Market, Hierarchy, and Trust: The Knowledge Economy and the Future of Capitalism." *Organization Science* 12 (2): 215–34. https://doi.org/10.1287/orsc.12.2.215.10117.

Alsos, Gry Agnete, Tommy Høyvarde Clausen, René Mauer, Stuart Read, and Saras D. Sarasvathy. 2020. "Effectual Exchange: From Entrepreneurship to the Disciplines and Beyond." *Small Business Economics* 54 (3): 605–19. https://doi.org/10.1007/s11187-019-00146-9.

Alvarez, Sharon A., and Jay B. Barney. 2007. "Discovery and Creation: Alternative Theories of Entrepreneurial Action." *Strategic Entrepreneurship Journal* 1: 11–26. https://doi.org/10.1002/sej.

Arend, Richard J., Hessammodin Sarooghi, and Andrew Burkemper. 2015. "Effectuation as Ineffectual? Applying the 3E Theory-Assessment Framework to a Proposed New Theory of Entrepreneurship." *Academy of Management Review* 40 (4): 630–51. https://doi.org/10.5465/amr.2014.0455.

Baron, Robert A. 2000. "Psychological Perspectives on Entrepreneurship: Cognitive and Social Factors in Entrepreneurs' Success." *Current Directions in Psychological Science* 9 (1): 15–18. https://doi.org/10.1111/1467-8721.00050.

———. 2008. "The Role of Affect in the Entrepreneurial Process." *Academy of Management Review* 33 (2): 328–40. https://doi.org/10.5465/AMR.2008.31193166.

———. 2009. "Effectual versus Predictive Logics in Entrepreneurial Decision Making: Differences between Experts and Novices. Does Experience in Starting New Ventures Change the Way Entrepreneurs Think? Perhaps, but for Now, 'Caution' Is Essential." *Journal of Business Venturing* 24 (4): 310–15. https://doi.org/10.1016/j.jbusvent.2008.04.001.

Brettel, Malte, René Mauer, Andreas Engelen, and Daniel Küpper. 2012. "Corporate Effectuation: Entrepreneurial Action and Its Impact on R&D Project Performance." *Journal of Business Venturing* 27 (2): 167–84. https://doi.org/10.1016/j.jbusvent.2011.01.001.

Brouwer, Maria T. 2002. "Weber, Schumpeter and Knight on Entrepreneurship and Economic

Development." *Journal of Evolutionary Economics* 12 (1–2): 83–105. https://doi.org/10.1007/s00191-002-0104-1.

Burns, Barclay L., Jay B. Barney, Ryan W. Angus, and Heidi N. Herrick. 2016. "Enrolling Stakeholders under Conditions of Risk and Uncertainty." *Strategic Entrepreneurship Journal* 10 (1): 97–106. https://doi.org/10.1002/sej.1209.

Busenitz, Lowell W., and Jay B. Barney. 1997. "Differences between Entrepreneurs and Managers in Large Organizations: Biases and Heuristics in Strategic Decision-Making." *Journal of Business Venturing* 12 (1): 9–30. https://doi.org/10.1016/S0883-9026(96)00003-1.

Cardon, Melissa S., Joakim Wincent, Jagdip Singh, and Mateja Drnovsek. 2009. "The Nature and Experience of Entrepreneurial Passion." *Academy of Management Review* 34 (3): 511–32. https://doi.org/10.5465/AMR.2009.40633190.

Chandler, Gaylen N., Dawn R. DeTienne, and Douglas W. Lyon. 2003. "Outcome Implications of Opportunity Creation/ Discovery Processes." *Babson College, Babson Kauffman Entrepreneurship Research Conference (BKERC)* (Vol. 2006), 398–409.

Chandler, Gaylen N., Dawn R. DeTienne, Alexander McKelvie, and Troy V. Mumford. 2011. "Causation and Effectuation Processes: A Validation Study." *Journal of Business Venturing* 26 (3): 375–90. https://doi.org/10.1016/j.jbusvent.2009.10.006.

Chiles, Todd H., Allen C. Bluedorn, and Vishal K. Gupta. 2007. "Beyond Creative Destruction and Entrepreneurial Discovery: A Radical Austrian Approach to Entrepreneurship." *Organization Studies* 28 (4): 467–93. https://doi.org/10.1177/0170840606067996.

Chiles, Todd H., Vishal K. Gupta, and Allen C. Bluedorn. 2008. "On Lachmannian and Effectual Entrepreneurship: A Rejoinder to Sarasvathy and Dew (2008)." *Organization Studies* 29 (2): 247–53. https://doi.org/10.1177/0170840607088154.

Cornelissen, Joep, and Jean Clarke. 2010. "Imagining and Rationalizing Opportunities: Inductive Reasoning and the Creation and Justification of New Ventures." *Academy of Management Review* 35 (4): 539–57. https://doi.org/10.5465/AMR.2010.53502700.

Csikszentmihalyi, Mihaly. 2014. *Flow and the Foundations of Positive Psychology*. https://doi.org/10.1007/978-94-017-9088-8.

Dew, Nicholas, Stuart Read, Saras D. Sarasvathy, and Robert Wiltbank. 2009. "Effectual versus Predictive Logics in Entrepreneurial Decision-Making: Differences between Experts and Novices." *Journal of Business Venturing* 24 (4): 287–309. https://doi.org/10.1016/j.jbusvent.2008.02.002.

———. 2011. "On the Entrepreneurial Genesis of New Markets: Effectual Transformations versus Causal Search and Selection." *Journal of Evolutionary Economics* 21 (2): 231–53. https://doi.org/10.1007/s00191-010-0185-1.

Dew, Nicholas, and Saras D. Sarasvathy. 2016. "Exaptation and Niche Construction: Behavioral Insights for an Evolutionary Theory." *Industrial and Corporate Change* 25 (1): 167–79. https://doi.org/10.1093/icc/dtv051.

———. 2007. "Innovations, Stakeholders & Entrepreneurship." *Journal of Business Ethics* 74 (3): 267–83. https://doi.org/10.1007/s10551-006-9234-y.

Doty, D. Harold, and William H. Glick. 1994. "Typologies as a Unique Form of Theory Building: Toward Improved Understanding and Modeling." *Academy of Management Review* 19 (2):

230–51. https://doi.org/10.5465/AMR.1994.9410210748.

Fischer, Eileen, and A. Rebecca Reuber. 2011. "Social Interaction via New Social Media: (How) Can Interactions on Twitter Affect Effectual Thinking and Behavior?" *Journal of Business Venturing* 26 (1): 1–18. https://doi.org/10.1016/j.jbusvent.2010.09.002.

Fisher, Greg. 2012. "Effectuation, Causation, and Bricolage: A Behavioral Comparison of Emerging Theories in Entrepreneurship Research." *Entrepreneurship Theory and Practice* 36 (5): 1019–51. https://doi.org/10.1111/j.1540-6520.2012.00537.x.

Galkina, Tamara, and Irina Atkova. 2020. "Effectual Networks as Complex Adaptive Systems: Exploring Dynamic and Structural Factors of Emergence." *Entrepreneurship: Theory and Practice* 44 (5): 964–95. https://doi.org/10.1177/1042258719879670.

Gavetti, Giovanni, Henrich R. Greve, Daniel A. Levinthal, and William Ocasio. 2012. "The Behavioral Theory of the Firm: Assessment and Prospects." *The Academy of Management Annals* 6 (1): 1–40. https://doi.org/10.1080/19416520.2012.656841.

Goel, Sanjay, Geoffrey G. Bell, and Jon L. Pierce. 2005. "The Perils of Pollyanna: Development of the Over-Trust Construct." *Journal of Business Ethics* 58 (1): 203–18. https://doi.org/10.1007/s10551-005-1415-6.

Goel, Sanjay, and Ranjan Karri. 2006. "Entrepreneurs, Effectual Logic, and over-Trust." *Entrepreneurship Theory and Practice* 30 (4): 477–93. https://doi.org/10.1111/j.1540-6520.2006.00131.x.

Grégoire, Denis A., and Naïma Cherchem. 2019. "A Structured Literature Review and Suggestions for Future Effectuation Research." *Small Business Economics* 53 (3). https://doi.org/10.1007/s11187-019-00158-5.

Griffin, Dale W, and Carol a Varey. 1996. "Towards a Consensus on Overconfidence." *Organizational Behavior and Human Decision Processes* 65 (3): 227–31. https://doi.org/10.1006/obhd.1996.0023.

Gupta, Vishal K., Todd H. Chiles, and Jeffery S. McMullen. 2016. "A Process Perspective on Evaluating and Conducting Effectual Entrepreneurship Research." *Academy of Management Review* 41 (3): 540–44. https://doi.org/10.5465/amr.2015.0433.

Huang, Laura, and Jone L. Pearce. 2015. "Managing the Unknowable: The Effectiveness of Early-Stage Investor Gut Feel in Entrepreneurial Investment Decisions." *Administrative Science Quarterly* 60: 634-670. https://doi.org/10.1177/0001839215597270.

Jiang, Yi, and Charles-Clemens Rüling. 2019. "Opening the Black Box of Effectuation Processes: Characteristics and Dominant Types." *Entrepreneurship Theory and Practice* 43 (1): 171–202. https://doi.org/10.1177/1042258717744204.

Jones, Marian V., and Lucrezia Casulli. 2014. "International Entrepreneurship: Exploring the Logic and Utility of Individual Experience Through Comparative Reasoning Approaches." *Entrepreneurship: Theory and Practice* 38 (1): 45–69. https://doi.org/10.1111/etap.12060.

Karami, Masoud, and Stuart Read. 2021. "Co-Creative Entrepreneurship." *Journal of Business Venturing* 36 (4): 1-16. https://doi.org/10.1016/j.jbusvent.2021.106125.

Karri, Ranjan, and Sanjay Goel. 2008. "Effectuation and Over-Trust: Response to Sarasvathy and Dew." *Entrepreneurship Theory and Practice* 32 (4): 739–48. https://doi.org/10.1111/j.1540-6520.2008.00251.x.

Kerr, Jon, and Nicole Coviello. 2019a. "Formation and Constitution of Effectual Networks: A Systematic Review and Synthesis." *International Journal of Management Reviews* 21 (3): 370-397. https://doi.org/10.1111/ijmr.12194.

———. 2019b. "Weaving Network Theory into Effectuation: A Multi-Level Reconceptualization of Effectual Dynamics." *Journal of Business Venturing*, 35 (2): 1–20. https://doi.org/10.1016/j.jbusvent.2019.05.001.

Kirzner, Israel M. 1997. "Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach." *Journal of Economic Literature* 35(1), 60-85. https://doi.org/10.2307/2729693.

Kirzner, Israel M. 1973. *Competition and Entrepreneurship*. University of Chicago Press.

Knight, Frank H. 1921. *Risk, Uncertainty and Profit*. New York, NY: Hart, Schaffner and Marx.

Lerner, Daniel A., Richard A. Hunt, and Dimo Dimov. 2018. "Action! Moving beyond the Intendedly-Rational Logics of Entrepreneurship." *Journal of Business Venturing* 33 (1): 52–69. https://doi.org/10.1016/j.jbusvent.2017.10.002.

Martens, Martin L., Jennifer E. Jennings, and P. Devereaux Jennings. 2007. "Do the Stories They Tell Get Them the Money They Need? The Role of Entrepreneurial Narratives in Resource Acquisition." *Academy of Management Journal* 50 (5): 1107–32. https://doi.org/10.5465/AMJ.2007.27169488.

McKelvie, Alexander, Gaylen N. Chandler, Dawn R. DeTienne, and Anette Johansson. 2019. "The Measurement of Effectuation: Highlighting Research Tensions and Opportunities for the Future." *Small Business Economics* 54(3), 689-720. https://doi.org/10.1007/s11187-019-00149-6.

McMullen, Jeffery S., and Dean A. Shepherd. 2006. "Entrepreneurial Action and the Role of Uncertainty in the Theory of the Entrepreneur." *Academy of Management Review* 31 (1): 132–52. https://doi.org/10.5465/AMR.2006.19379628.

Milliken, Frances J. 1987. "Three Types of Perceived Uncertainty About the Environment: State, Effect, and Response Uncertainty." *Academy of Management Review* 12 (1): 133–43. https://doi.org/10.5465/AMR.1987.4306502.

Newbert, Scott L., and Erno T. Tornikoski. 2013. "Resource Acquisition in the Emergence Phase: Considering the Effects of Embeddedness and Resource Dependence." *Entrepreneurship: Theory and Practice* 37 (2): 249–80. https://doi.org/10.1111/j.1540-6520.2011.00461.x.

Oakes, Guy. 2017. "Max Weber on Value Rationality and Value Spheres." *Max Weber* 3 (1): 357–75. https://doi.org/10.4324/9781315264899-25.

Perry, John T., Gaylen N. Chandler, and Gergana Markova. 2012. "Entrepreneurial Effectuation: A Review and Suggestions for Future Research." *Entrepreneurship Theory and Practice* 36 (4): 837–61. https://doi.org/10.1111/j.1540-6520.2010.00435.x.

Pfeffer, Jeffrey, and Gerald R. Salancik. 1981. *The External Control of Organizations: A Resource Dependence Perspective*. New York, NY: Harper & Row.

Podoynitsyna, Ksenia, Hans Van der Bij, and Michael Song. 2012. "The Role of Mixed Emotions in the Risk Perception of Novice and Serial Entrepreneurs." *Entrepreneurship: Theory and Practice* 36 (1): 115–40. https://doi.org/10.1111/j.1540-6520.2011.00476.x.

Rabin, Matthew. 1998. "Psychology and Economics." *Journal of Economic Literature* 36 (1): 11–

46. https://doi.org/10.1057/9780230226203.3356.

Raz, Joseph. 2017. “The Myth of Instrumental Rationality.” *Journal of Ethics and Social Philosophy* 1 (1): 1–28. https://doi.org/10.26556/jesp.v1i1.1.

Read, Stuart, Nicholas Dew, Saras D. Sarasvathy, Michael Song, and Robert Wiltbank. 2009. “Marketing Under Uncertainty: The Logic of an Effectual Approach.” *Journal of Marketing* 73 (3): 1–18. https://doi.org/10.1509/jmkg.73.3.1.

Read, Stuart, and Saras D. Sarasvathy. 2005. “Knowing What to Do and Doing What You Know.” *The Journal of Private Equity* 9 (1): 45–62. https://doi.org/10.3905/jpe.2005.605370.

Read, Stuart, Saras D. Sarasvathy, Nicholas Dew, and Robert Wiltbank. 2016. “Response to Arend, Sarooghi, and Burkemper (2015): Cocreating Effectual Entrepreneurship Research.” *Academy of Management Review* 41 (3): 528–36. https://doi.org/10.5465/amr.2015.0180.

Read, Stuart, Michael Song, and Willem Smit. 2009. “A Meta-Analytic Review of Effectuation and Venture Performance.” *Journal of Business Venturing* 24 (6): 573–87. https://doi.org/10.1016/j.jbusvent.2008.02.005.

Reymen, Isabelle, Petra Andries, Hans Berends, Rene Mauer, Ute Stephan, and Elco van Burg. 2015. “Understanding Dynamics of Strategic Decision Making in Venture Creation: A Process Study of Effectuation and Causation.” *Strategic Entrepreneurship Journal* 9 (4): 351–79. https://doi.org/10.1002/sej.1201.

Reymen, Isabelle, Hans Berends, Rob Oudehand, and Rutger Stultiëns. 2017. “Decision Making for Business Model Development: A Process Study of Effectuation and Causation in New Technology-Based Ventures.” *R&D Management* 47 (4): 595–606. https://doi.org/10.1111/radm.12249.

Sarasvathy, Saras D. 2001. “Causation and Effectuation: Toward a Theoretical Shift from Economic Inevitability to Entrepreneurial Contingency.” *Academy of Management Review* 26 (2): 243–63. https://doi.org/10.5465/AMR.2001.4378020.

———. 2004. “Making It Happen: Beyond Theories of the Firm to Theories of Firm Design.” *Entrepreneurship Theory and Practice* 28 (6): 519–31. https://doi.org/10.1111/j.1540-6520.2004.00062.x.

Sarasvathy, Saras D., and Henrik Berglund. 2010. “On the Relevance of Decision-Making in Entrepreneurial Decision Making.” *Historical Foundations of Entrepreneurial Research*, 163–84.

Sarasvathy, Saras D., and Nicholas Dew. 2005a. “Entrepreneurial Logics for a Technology of Foolishness.” *Scandinavian Journal of Management* 21 (4 SPEC. ISS.): 385–406. https://doi.org/10.1016/j.scaman.2005.09.009.

———. 2005b. “New Market Creation through Transformation.” *Journal of Evolutionary Economics* 15 (5): 533–65. https://doi.org/10.1007/s00191-005-0264-x.

Sarasvathy, Saras D., Nicholas Dew, Stuart Read, and Robert Wiltbank. 2008. “Designing Organizations That Design Environments: Lessons from Entrepreneurial Expertise.” *Organization Studies* 29 (3): 331–50. https://doi.org/10.1177/0170840607088017.

Sarasvathy, Saras D., Nicholas Dew, S. Ramakrishna Velamuri, and Sankaran Venkataraman. 2010. “Three Views of Entrepreneurial Opportunity.” In: Zoltan J. Acs, and David B. Audretsch (eds) *Handbook of Entrepreneurship Research*, 77–96. New York, NY: Springer.

https://doi.org/10.1007/978-1-4419-1191-9_4.

Sarasvathy, Saras D., Anil R. Menon, and Graciela Kuechle. 2013. "Failing Firms and Successful Entrepreneurs: Serial Entrepreneurship as a Temporal Portfolio." *Small Business Economics* 40 (2): 417–34. https://doi.org/10.1007/s11187-011-9412-x.

Schumpeter, Joseph Alois. 1934. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle.* NewYork: Oxford University Press.

———. 1984. "The Meaning of Rationality in the Social Sciences." *Zeitschrift Für Die Gesamte Staatswissenschaft / Journal of Institutional and Theoretical Economics* 140 (4): 577–93. http://www.jstor.org/stable/40750743.

Sharma, Pramodita, and Carlo Salvato. 2011. "Commentary: Exploiting and Exploring New Opportunities over Life Cycle Stages of Family Firms." *Entrepreneurship Theory and Practice* 35 (6): 1199–1205.

Simon, Herbert A. 1976. "From Substantive to Procedural Rationality." *25 Years of Economic Theory*, 65–86. https://doi.org/10.1007/978-1-4613-4367-7_6.

Simon, Herbert A. 1993. "Altruism and Economics." *The American Economic Review* 83 (2): 156–61.

Smolka, Katrin M., Ingrid Verheul, Katrin Burmeister–Lamp, and Pursey P.M.A.R. Heugens. 2018. *Get It Together! Synergistic Effects of Causal and Effectual Decision–Making Logics on Venture Performance*. *Entrepreneurship Theory and Practice*. Vol. 42. https://doi.org/10.1177/1042258718783429.

Starr, Jennifer A., and Ian C. MacMillan. 1990. "Resource Cooptation via Social Contracting: Resource Acquisition Strategies for New Ventures." *Strategic Management Journal* 11, 79–92.

Steyaert, Chris. 2007. "'Entrepreneuring' as a Conceptual Attractor? A Review of Process Theories in 20 Years of Entrepreneurship Studies." *Entrepreneurship & Regional Development* 19 (6): 453–77. https://doi.org/10.1080/08985620701671759.

Townsend, David M., Richard A. Hunt, Jeffery S. McMullen, and Saras D. Sarasvathy. 2018. "Uncertainty, Knowledge Problems, and Entrepreneurial Action." *Academy of Management Annals* 12 (2): 659–87. https://doi.org/10.5465/annals.2016.0109.

Weber, Max. 1978. *Economy and Society: An Outline of Interpretive Sociology*. *Economy and Society*. University of California Press. https://doi.org/10.2307/2091965.

Weick, Karl E. 1979. *The Social Psychology of Organizing* (2nd ed.). Reading, MA: Addison-Wesley.

———. 1995. *Sensemaking in Organizations*.Thousand Oaks, CA: Sage.

Werhahn, Dorothea, René Mauer, Tessa C. Flatten, and Malte Brettel. 2015. "Validating Effectual Orientation as Strategic Direction in the Corporate Context." *European Management Journal* 33 (5): 305–13. https://doi.org/10.1016/j.emj.2015.03.002.

Williamson, Oliver E. 1993. "Calculativeness, Trust, and Economic Organization." *The Journal of Law and Economics* 36 (1, Part 2): 453–86. https://doi.org/10.1086/467284.

Wiltbank, Robert, Nicholas Dew, Stuart Read, and Saras D. Sarasvathy. 2006. "What to Do Next? The Case for Non-Predictive Strategy." *Strategic Management Journal* 27 (10): 981–98. https://doi.org/10.1002/smj.555.

Wiltbank, Robert, Stuart Read, Nicholas Dew, and Saras D. Sarasvathy. 2009. “Prediction and Control under Uncertainty: Outcomes in Angel Investing.” *Journal of Business Venturing* 24 (2): 116–33. https://doi.org/10.1016/j.jbusvent.2007.11.004.

Yu, Xiaoyu, Yida Tao, Xiangming Tao, Fan Xia, and Yajie Li. 2018. “Managing Uncertainty in Emerging Economies: The Interaction Effects between Causation and Effectuation on Firm Performance.” *Technological Forecasting and Social Change* 135 (December 2017): 121–31. https://doi.org/10.1016/j.techfore.2017.11.017.